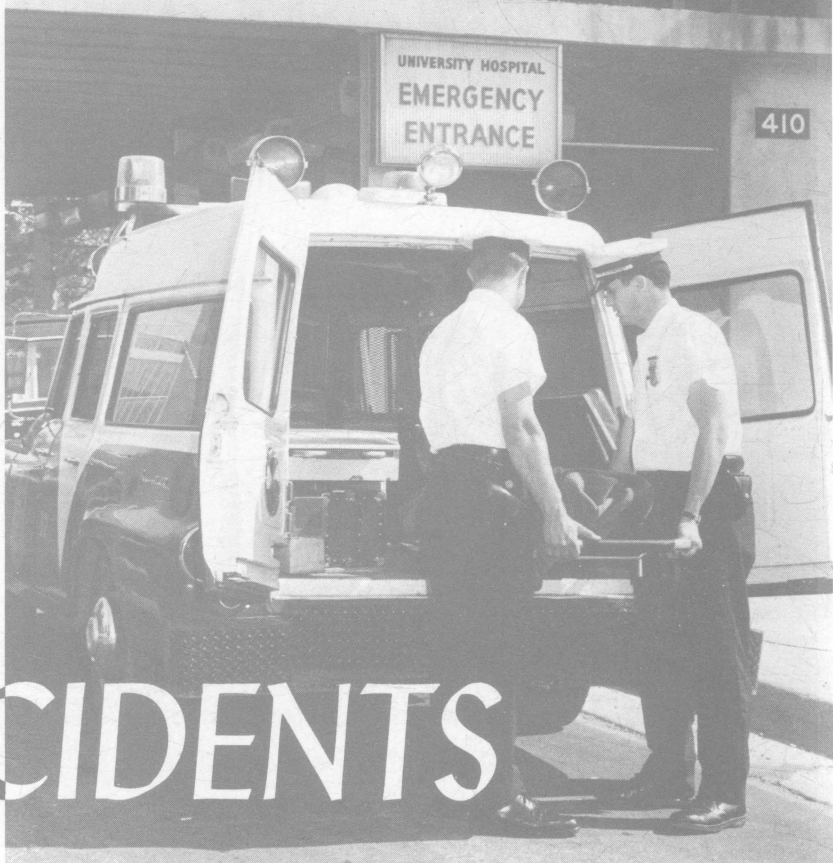


June 1968



ACCIDENTS

*To Farm and Rural Nonfarm
People in Ohio*

EXTENSION BULLETIN 500
Ohio Cooperative Extension Service
RESEARCH BULLETIN 1016

Ohio Agricultural Research and Development Center

ACCIDENTS

To Farm and Rural Nonfarm People in Ohio



Fourteen per cent of all accident victims
in 1967 required hospitalization.

By

G. HOWARD PHILLIPS and W. E. STUCKEY*

It was a fact in Ohio in 1967:

- 22,748 farm people and 176,943 rural nonfarm people were involved in accidents.
- One in six of the farm families in Ohio had an accident.
- One in five of the rural nonfarm families in Ohio had an accident.
- 97 per cent of the farm accidents and 98 per cent of the rural nonfarm accidents required a doctor's care.
- 15 per cent of the farm accidents and 13 per cent of the rural nonfarm accidents required hospitalization.
- 36,397 man-days of labor were hired to replace labor of injured farm persons and 53,083 for rural nonfarm persons.
- 64 per cent of the accidents to farm people and 68 per cent to rural nonfarm people occurred to men and boys.
- 23 per cent of the accidents to farm people occurred in the home, 40 per cent on the farm outside the home, and 37 per cent while away from the farm.
- 31 per cent of the accidents to rural nonfarm people occurred in the home, 14 per cent at the residence outside of the home, and 54 per cent while away from the residence.
- 27 per cent of the injuries to farm people and 25 per cent of the injuries to rural nonfarm people resulted from a fall.

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ACCIDENTS TO RURAL PEOPLE IN OHIO

This study is the third in a series of three of the number and nature of accidents to Ohio farm people. The two previous studies were conducted for the years 1957 and 1962. A new dimension was added to the present study with the inclusion of rural nonfarm families living outside of incorporated places.

The word "accident" means different things to different people. To more than 22,000 farm people and 176,000 rural nonfarm people in Ohio in 1967, an accident meant a variety of things. To the child who was only slightly injured from a bicycle fall, it meant a trip to the doctor and a loss of play time. To the farmer who lost his hand in an elevator mishap, it meant a great deal of pain, weeks of costly recuperation, medical and hospital bills, and a permanent disability.

Projected U. S. census figures indicated a 1967 farm population in Ohio of 390,423 and a rural nonfarm population (living outside of incorporated places) of 2,701,970. Farm people were involved in 22,748 accidents and rural nonfarm people were involved in 176,943 accidents which re-

quired professional medical care or loss of one-half day or more of time from normal activities.

In comparing patterns of accidents to farm people in Ohio in 1962 and 1967, a number of changes were evident. Data in this study would tend to support three major shifts in accident patterns. A smaller percentage of farm work accidents involved farm machinery, farm tools, and farm animals, but a larger percentage involved motorized vehicles and recreational activities (Table 5). Accident victims tended to be younger than in previous studies.

It is suggested that the information contained in this publication be studied by the members of all rural groups. Members should then determine the course of action to further reduce accidents. This information could be used as a basis for discussions, demonstrations, displays, talks, news releases, radio, and TV programs. Many people should be involved in planning any safety program.

As individuals we should inspect our farms and homes for accident hazards and remove or minimize all hazards found.

Table 1
Accidents to Farm and Rural Nonfarm People Living Outside of an Incorporated Place, Ohio, 1967

	FARM		RURAL NONFARM	
	Total	Per Accident	Total	Per Accident
Number of accidents*	22,748		176,943	
Days lost due to accidents	241,129	10.6	973,187	5.5
Days hired to replace lost labor	36,397	1.6	53,083	0.3
Cost of accidents (total)	\$4,943,140	\$217.30	\$28,893,022	\$163.29
Medical	3,250,234	142.88	14,351,847	81.11
Property damage	1,243,861	54.68	13,778,551	77.87
Hired help	449,045	19.74	762,624	4.31

* An accident was defined as an injury to any member of the family who *lives* at this residence sometime during the year and which requires professional medical care (doctor, hospital, nurse, X-ray, etc.) or results in the loss of one-half day or more of time from the normal activities of the injured, regardless where the injury occurred.

WHAT TYPE OF INJURIES OCCURRED?

The most frequent injuries were cuts, fractures, bruises, and sprains (Table 2). These accounted for 78 per cent of the injuries for both farm and rural nonfarm people. Cuts were the most common injury representing about one out of every three accidents to both groups. Fifty-two

per cent of the accidents to farm victims were listed as slight, 45 per cent as severe, and 3 per cent resulted in permanent or fatal injuries. Accidents to rural nonfarm people resulted in 62 per cent categorized as slight, 36 per cent as severe, and 2 per cent as permanent or fatal.

Table 2
Types of Injuries Occurring to Ohio Farm and Rural Nonfarm People
Living Outside of Incorporated Places, 1967

TYPE OF INJURY	FARM		RURAL NONFARM	
	Number	Per cent	Number	Per cent
Cut	6,779	29.8	66,531	37.6
Fracture	5,642	24.8	36,981	20.9
Bruise	2,753	12.1	13,978	7.9
Sprain	2,525	11.1	21,233	12.0
Puncture	978	4.3	5,662	3.2
Burn	637	2.8	8,316	4.7
Eye	591	2.6	4,247	2.4
Bite	478	2.1	3,008	1.7
Infection	318	1.4	354	0.2
Poison	45	0.2	885	0.5
Concussion	0	0.0	885	0.5
Miscellaneous	2,002	8.8	14,863	8.4
TOTAL	22,748	100.0	176,943	100.0

WHAT WERE THE PEOPLE DOING?

Fifty per cent of accidents to farm people occurred on the job. This is contrasted to about 26 per cent for rural nonfarm people (Table 3).

Leisure pursuits accounted for six out of every 10 accidents among rural nonfarm persons. The number of leisure-time

accidents occurring to farm residents increased from 36 per cent in 1962 to 44 per cent in 1967. Thirty-seven per cent of the farm accidents occurred away from the farm, while 54 per cent of the rural nonfarm people had accidents away from their residence.

Table 3

Per Cent of Accidents Reported According to Activity of Victims and Location of Accidents, Ohio Farm and Rural Nonfarm People Living Outside of Incorporated Places, 1967

Activity of Accident Victims	LOCATION OF ACCIDENT											
	Total Accidents		In Home or Dooryard		Building or Barnyard		Field		Away from Rural Residence		Other	
	Farm	Rural Non-farm	Farm	Rural Non-farm	Farm	Rural Non-farm	Farm	Rural Non-farm	Farm	Rural Non-farm	Farm	Rural Non-farm
	22,748	176,943	5,164	55,560	6,028	9,201	3,116	15,217	8,395	96,080	45	885
	%	%	%	%	%	%	%	%	%	%	%	%
On the Job	50.4	25.8	41.7	17.2	76.8	61.9	62.1	20.0	32.7	28.5	0.0	0.0
Off the Job	5.4	9.8	4.2	12.5	5.4	14.3	5.2	8.6	6.4	8.1	0.0	0.0
Leisure	44.0	64.4	54.1	70.3	17.8	23.8	32.7	71.4	60.9	63.4	0.0	100.0
Other	0.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	100.0	0.0
TOTAL	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0

HOW DID THE ACCIDENTS OCCUR?

Victims were thrown against objects, were caught in or between various things, and were struck by falling or flying objects. Many fell either on the same level or from a different level, and some slipped. A smaller number were burned,

had collisions, were shot with firearms, or were stepped on by animals. The relative frequency of how these accidents occurred is extremely similar for both farm and rural nonfarm groups (See Table 4).

Table 4

How Accidents Occurred to Ohio Farm and Rural Nonfarm People Living Outside of Incorporated Places, 1967

HOW	FARM		RURAL NONFARM	
	Number	Per cent	Number	Per cent
Fall, same level	2,639	11.6	20,348	11.5
Fall, different level	3,435	15.1	23,533	13.3
Slip	2,434	10.7	13,094	7.4
Lifting	637	2.8	4,247	2.4
Caught in or between	2,525	11.1	12,209	6.9
Struck against	4,254	18.7	33,088	18.7
Struck by falling or flying object	2,957	13.0	27,426	15.5
Burn	478	2.1	6,547	3.7
Firearm	45	.2	885	.5
Collision	1,888	8.3	19,995	11.3
Inhaling	0	0	885	.5
Other	1,456	6.4	14,686	8.3
TOTAL	22,748	100.0	176,943	100.0

WHO WERE INVOLVED IN ACCIDENTS?

Husbands and sons had more accidents than other members of the family. This is true for both farm and rural nonfarm families (Figure 1). Husbands and sons accounted for 62 per cent of accidents to farm and 67 per cent to rural nonfarm people. Sons in both groups were victims of more than one-third of all accidents.

Comparing the percentage of farm family members who had accidents in 1962 with those of 1967, husbands' accident frequency decreased from 34 to 26 per cent, wives' increased from 14 to 20 per cent, sons' increased from 32 to 35

per cent, and daughters' increased from 12 to 15 per cent. There was a slight overall increase for all female family members.

Age and accident frequency is depicted in Figure 2. The 5-to-14 age group had the highest percentage of accidents for both the farm (26.6%) and rural nonfarm (36.3%) people. Comparing the percentage of accidents to persons 45 and over, farm people had 29 per cent, while the rural nonfarm had 13 per cent. It should be noted that in 1960, the population distribution for Ohio revealed a relatively large number of farm people over

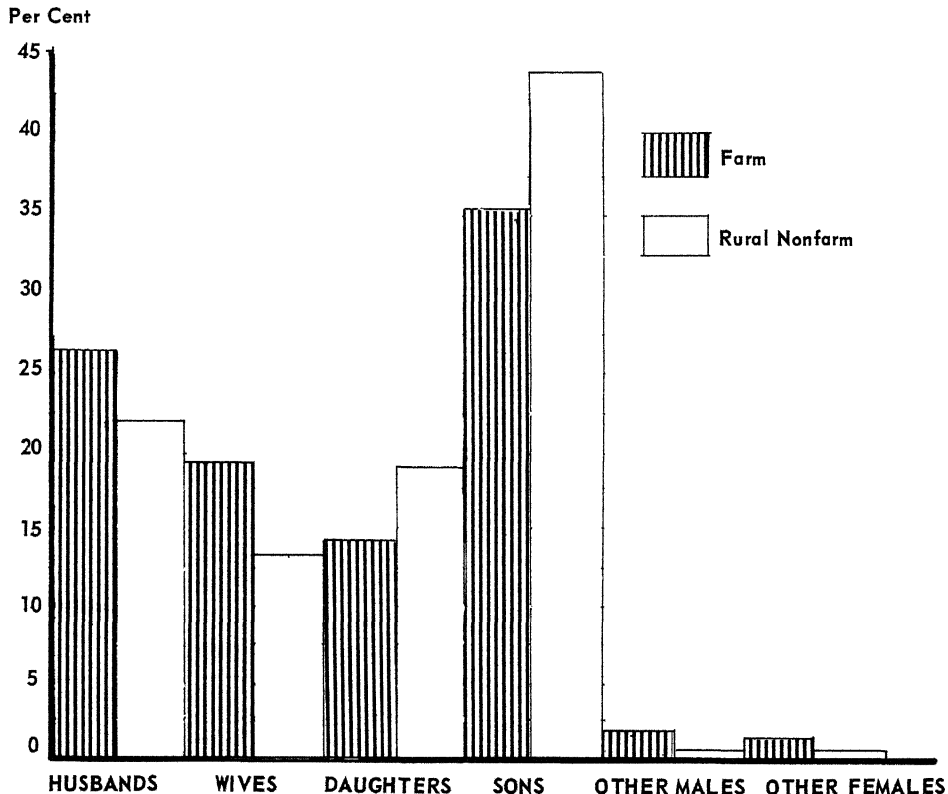


Figure 1. Per Cent of Family Members Who Had Accidents, Ohio Farm and Rural Nonfarm People Living Outside of Incorporated Places, 1967.

45 years of age. There was about 26 per cent of the total population of Ohio in this age grouping contrasted to about 36 per cent for the farm population. This

may in part explain the highest percentage of accidents among farm people in these age categories as compared to the non-farm population.

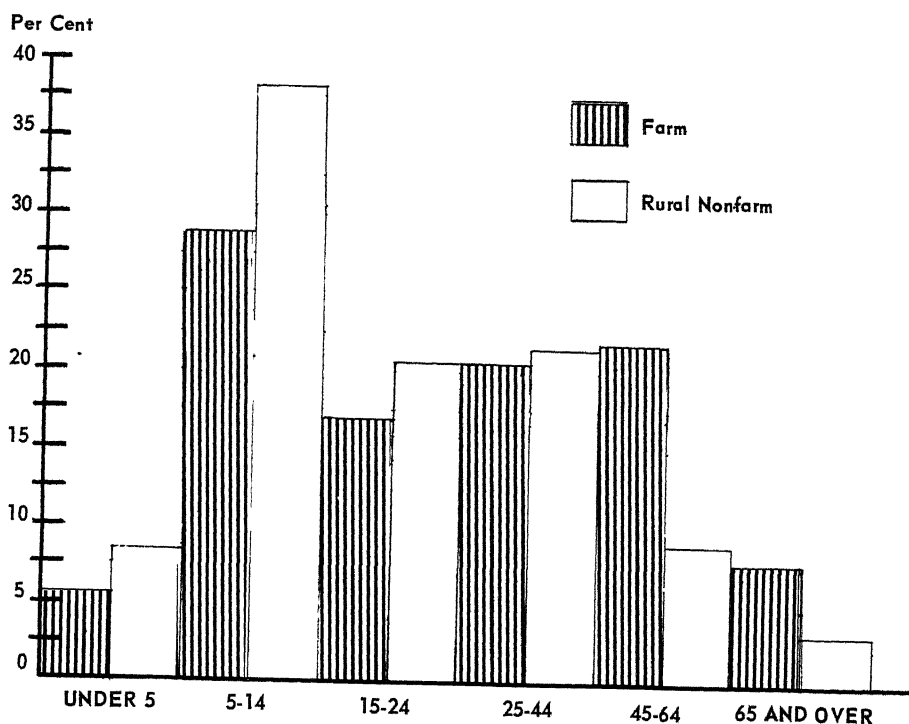


Figure 2. Per Cent of Farm and Rural Nonfarm People Living Outside of Incorporated Places Having Accidents, by Age Groups, Ohio, 1967.

WHAT THINGS WERE INVOLVED?

The automobile was the single thing most often involved in accidents for both farm (8.0%) and rural nonfarm (10.8%) people (Table 5). Hazards associated with buildings (4.3%) were the second greatest offenders involving farm people and industrial equipment and materials (5.2%) for rural nonfarm people.

Pesticides and herbicides have been of great interest to the general public during recent years. It should be noted in Table 5 that only 1.2 per cent of accidents occurring to rural nonfarm people involved pesticides and herbicides, and the number involving farm people was too low to classify separately.

As would be expected, farm people had more accidents associated with farm machinery, tools and animals than rural nonfarm residents. Rural nonfarm people had a higher per cent of accidents involving household, recreational facilities and general things than the farm population.

Comparing frequency of accidents of

farm people in 1962 to 1967, farm persons had a lower per cent of accidents involving farm machinery, tools and animals in 1967 (29.1%) than in 1962 (33.2%). It would appear that educational programs directed at farm work accidents since 1962 have been key factors in this reduction.

Table 5
Things Involved in Accidents to Ohio Farm and Rural Nonfarm People
Living Outside of Incorporated Places, 1967

THINGS INVOLVED IN ACCIDENTS	FARM		RURAL NONFARM	
	Number	Per cent	Number	Per cent
Farm Machinery		12.3		2.4
Tractor	644	2.8	1,239	0.7
Elevator	430	1.9	*	0.0
Wagon	375	1.7	1,239	0.7
Combine	214	0.9	*	0.0
Corn Picker	159	0.7	*	0.0
Other	966	4.3	1,769	1.0
Tools		8.8		6.2
Pitch Fork, Shovel, or Hoe	537	2.4	*	0.0
Knife	375	1.7	2,123	1.2
Saw	159	0.7	1,239	0.7
Other	910	4.1	7,609	4.3
Animals		8.0		4.1
Horse	644	2.8	4,777	2.7
Cow	591	2.6	*	0.0
Dog	268	1.2	1,239	0.7
Hog	159	0.7	*	0.0
Other	157	0.7	1,239	0.7
Motorized Vehicles		11.3		14.1
Auto	1,820	8.0	19,110	10.8
Truck	375	1.7	3,539	2.0
2 Wheeled	321	1.4	1,769	1.0
Other	51	0.2	531	0.3
Household		5.8		7.4
Furniture	644	2.8	6,016	3.4
Appliances	214	0.9	1,769	1.0
Stoves and Furnaces	214	0.9	*	0.0
Utensils	*	0.0	1,769	1.0
Other	266	1.3	3,539	2.0

Table 5—Continued

THINGS INVOLVED IN ACCIDENTS	FARM		RURAL NONFARM	
	Number	Per cent	Number	Per cent
Recreational Facilities		8.9		16.1
Baseball	482	2.1	2,123	1.2
Football	321	1.4	5,662	3.2
Unorganized play	268	1.2	3,008	1.7
Gym Class	205	0.9	2,123	1.2
Basketball	205	0.9	4,424	2.5
Playground	*	0.0	5,131	2.9
Wrestling	*	0.0	1,239	0.7
Skating	*	0.0	1,239	0.7
Others	535	2.5	3,539	2.0
General Things		44.9		49.7
All Buildings	966	4.3	6,547	3.7
Nail	804	3.5	5,131	2.9
Person Himself	804	3.5	5,131	2.9
Stairs and Steps	698	3.1	6,547	3.7
Ice	644	2.8	3,008	1.7
Sidewalks, Stones, Concrete, etc.	644	2.8	5,131	2.9
Bicycle	591	2.6	6,547	3.7
Ladder	591	2.6	2,654	1.5
Glass	537	2.4	6,547	3.7
Lumber	537	2.4	2,123	1.2
Industrial Equipment and Materials	537	2.4	9,201	5.2
Gates and Fences	430	1.9	*	0.0
Another Person	321	1.4	3,539	2.0
Lawn Mower	268	1.2	3,539	2.0
Tree	159	0.7	3,893	2.2
Hot Liquids	*	0.0	3,539	2.0
Gun	*	0.0	1,239	0.7
Pesticides and Herbicides	*	0.0	2,123	1.2
Other	1,610	7.3	11,501	6.5
TOTAL	22,748	100.0	176,943	100.0

* Number of accidents reported inadequate to classify separately. Included under other.

WHEN DID THE ACCIDENTS OCCUR?

More than two-thirds of the accidents occurred in the afternoon and evening for both the farm (69.0%) and rural nonfarm (73.5%) population. The 1962 study of farm accidents reported a similar occurrence.

The highest per cent of accidents oc-

curred in June (14.0%) among the farm population and July (12.5%) for rural nonfarm people. Figure 3 depicts the per cent of accidents occurring each month. Long days and increased activities appear to have an influence on the frequency of accidents.

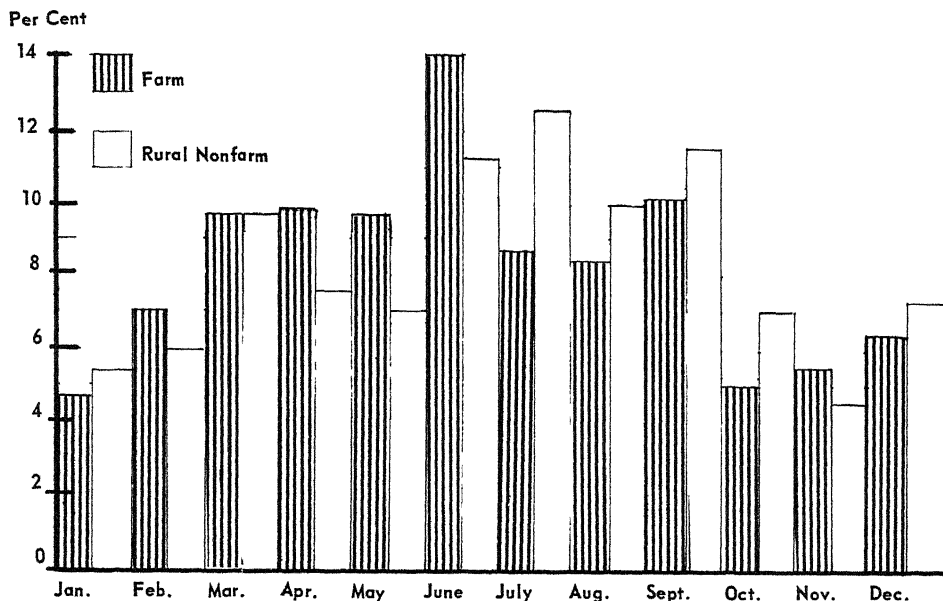


Figure 3. Accidents to Ohio Farm and Rural Nonfarm People Living Outside of Incorporated Places, by Months, 1967.

WHAT DID THESE ACCIDENTS COST?

Accidents are not only painful and time consuming, but costly. More than 97 per cent of the accidents to farm and rural nonfarm people required a doctor's care. Fifteen per cent of the farm and 13 per cent of the rural nonfarm accident victims required hospitalization.

The total cost of accidents occurring to farm people averaged \$217.30. This compares to \$163.29 for rural nonfarm residents. When accident costs are broken down, medical and hired help costs are much higher for farm than rural nonfarm family members. Property damage is higher for the rural nonfarm group.

Total costs of accidents, excluding property damage, to farm residents increased from \$94.77 in 1962 to \$162.62 in 1967. This difference amounted to an increase of 72 per cent in cost of accidents, or \$67.85 per accident.

Help hired to replace lost labor per accident was about four times greater for farm (\$19.74) than for rural nonfarm (\$4.31) people. These findings seem logical in that the nature of many farm businesses is such that the work has to continue almost without interruption during production period. In some cases the farm family members absorb this extra load. In

other cases, help outside the family had to be hired. In many cases of the rural nonfarm accident victims, the labor replacement or loss is absorbed by the employer.

As reflected in medical costs, accidents to farm (45.3%) residents tended to be

more severe than for rural nonfarm (36.1%) people. Permanent injuries were also higher for farm (1.9%) than rural nonfarm (1.0%) people. This difference in severity may in part explain the higher medical cost associated with farm accidents.

HOW WAS THE STUDY CONDUCTED?

The purpose of this study was to measure the incidence of accidents to Ohio rural people during 1967 and to describe the situation in which these accidents occurred.

A stratified random sample of 12 of Ohio's 88 counties was selected. Two counties were chosen from each of six geographic areas representing various topographic, climatic conditions and types of farming. The sample counties were selected by random means and are shown in Figure 4. The boundaries of the geographic areas used in the study are also shown in Figure 4.

Cluster samples of 10 or fewer farm* and rural nonfarm families living outside of incorporated places were randomly selected in each of the 12 counties. Volunteer interviewers were trained and the sample families were interviewed every three months during 1967 to get a cumulative record of accidents. Four contacts were made during the year to reduce under-reporting due to forgetfulness.

The interviewers participated in a three-hour county interviewer training meeting where they were assigned the families they would contact.

During 1967, 7,260 farm people and 6,215 rural nonfarm people living outside of incorporated places were interviewed four times during the year. The farm sample represented 14.7 per cent of the farm population in the 12 sample counties and 1.9 per cent of the total farm population of the state. The rural nonfarm population living outside of incorporated places

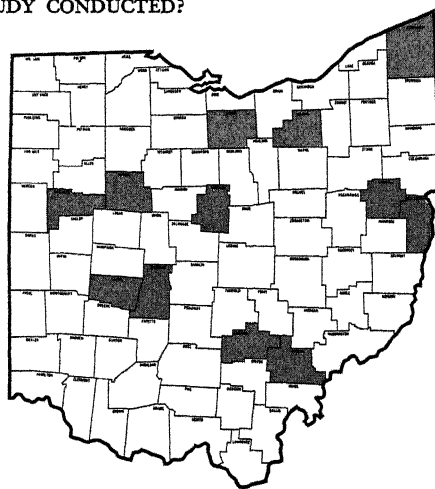


Fig. 4—Geographical distribution of 12 Counties in which study was made.

was represented by 2.8 per cent of the rural nonfarm population in the 12 sample counties and 0.23 per cent of the total rural nonfarm people of the state. The total farm population in the 12 sample counties represents 12.6 per cent of the total Ohio farm population and the total rural nonfarm population in the 12 sample counties represents 8.3 per cent of the total Ohio rural nonfarm population.

The data presented in this study is a result of expanding the sample data to the state as a whole.

* A farm family is defined as living on a farm with 10 acres or more and \$50 or more products sold; or less than 10 acres with \$250 or more products sold.

ACKNOWLEDGEMENT: This study was made possible by the cooperation of the county Extension agents and volunteer interviewers of the 12 sample counties. The study involved the cooperation of the Ohio Cooperative Extension Service, the Ohio Agricultural Research and Development Center, Department of Agricultural Economics and Rural Sociology at The Ohio State University, The Ohio Farm and Home Safety Committee, Inc., and the Ohio Rural Health Council.

The format for this publication followed that of Extension Bulletin 439 and Research Bulletin 941 which describes the 1962 Farm Accident Survey, and Extension Bulletin 385 which describes the 1957 Study. Special credit is given Bond L. Bible, who was co-author of the 1962 bulletin and R. H. Baker, who co-authored the 1957 bulletin.

Credit should also be given Albert Pugh, Extension Resource Development Specialist, for his assistance in developing the study and assisting with the field work.